creates a fluid-filled lumen by appreciating hydrostatic pressure. As shown in Figure 2B, microgravity coculture results in the integration of therapeutic cells into Sertoli cell biochambers;

Figure 3 is a mechanism showing the way the Sertoli cells effect immunosuppression at the graft site. Positive FasL immunostatining identifies Sertoli cells and suggests a mechanism by which they may effect immune suppression at the graft site. The expression of FasL by Sertoli cells induces apoptosis of the invading immune cells by binding to the upregulated Fas receptors on these activated T-lymphocytes. This results in the attrition of these immune cells at the graft site thereby down-regulating the immune responses-this by an already well-defined mechanism occurring naturally in the mammalian system;

Please substitute the following paragraph at page 11, lines 26-29:

Figure 6 is a photograph of Sertoli-Neuron-Aggregate-Cells (SNACS) for in vitro following co-culture of rat Sertoli cells and NT2 neurons in simulated microgravity utilizing the High Aspect Rotation Velocity (HARV) bioreactor (1 week HARV co-culture); and

Please substitute the following paragraph at page 12, lines 1-3:

Figure 7 is a photograph of immunocytochemical staining of mouse FasL and human nuclear matrix proteins in Sertoli-Neuron Aggregated Cells (SNACs) following HARV incubated co-cultures (1 week HARV co-culture).

In the Claims

Please substitute the following claims:

Claim 25 (amended)

A biochamber comprising a lumen, an outer wall defining said lumen, and a plurality of non-Sertoli cells contained within said lumen, wherein said outer wall comprises Sertoli cells.

Claim 29 (amended)

The biochamber according to claim 25, wherein said plurality of non-Sertoli cells are selected from the group consisting of neuronal cells, NT2 cells, pancreatic islet cells, dopaminergic cells, and bovine chromaffin cells.

Claim 30 (amended)

The biochamber according to claim 25, wherein said plurality of non-Sertoli cells comprises pancreatic islet cells.

Claim 31 (amended)

The biochamber according to claim 25, wherein said plurality of non-Sertoli cells comprises neuronal cells.

Claim 32 (amended)

The biochamber according to claim 31, wherein said neuronal cells are NT2 neurons.

Claim 33 (amended)

The biochamber according to claim 25, wherein said plurality of non-Sertoli cells comprises secreting cells.

Claim 34 (amended)

The biochamber according to claim 25, wherein said plurality of non-Sertoli cells includes at least one therapeutic cell.

Claim 35 (amended)

The biochamber according to claim 25, wherein said Sertoli cells of said outer wall provide immunoprotection to said plurality of non-Sertoli cells within said lumen upon transplantation of said biochamber.

Claim 40 (amended)

A method of making a biochamber comprising:

co-culturing Sertoli cells and non-Sertoli cells in the presence of a basemement membrane preparation for a period of time sufficient for the Sertoli cells to form an outer wall that encapsulates a plurality of the non-Sertoli cells.

Claim 41 (amended)

The method according to claim 40, wherein said co-culturing is carried out under microgravity conditions.

Claim 43 (amended)

The method according to claim 40, wherein the basement membrane preparation causes epithelization and polarization of the Sertoli cells, thereby inducing the Sertoli cells to form the outer wall that encapsulates the plurality of non-Sertoli cells.

Claim 45 (amended)

The method according to claim 40, wherein the basement membrane preparation comprises MATRIGEL.

Claim 49 (amended)

The method according to claim 40, wherein the outer wall comprises a monolayer of Sertoli cells.

Claim 50 (amended)

A method of transplanting cells comprising the steps of:

transplanting a biochamber into a host, wherein the biochamber comprises a lumen, an outer wall defining said lumen, and a plurality of non-Sertoli cells contained within said lumen, wherein said outer wall comprises Sertoli cells.

Claim 52 (amended)

The method according to claim 50, wherein the outer wall comprises a monolayer of Sertoli cells.

Please cancel claims 28, 36, 37, 42, 44, and 51, without prejudice.

Please add the following claims:

56. The method of claim 50, wherein said method further comprises making a biochamber prior to said transplanting, wherein said making comprises co-culturing the Sertoli cells and non-Sertoli cells in the presence of a basement membrane preparation for a period of time sufficient for the basement membrane preparation to induce the Sertoli cells to form an outer wall that encapsulates the plurality of non-Sertoli cells within the lumen.

57. The method of claim 56, wherein the basement membrane preparation comprises MATRIGEL.

58. The method of claim 56, wherein the co-culturing is carried out under microgravity conditions.

59. A method of making a biochamber comprising co-culturing Sertoli cells and non-Sertoli cells in the presence of a basement membrane preparation for a period of time sufficient for the Sertoli cells to form an outer wall that encapsulates a plurality of the non-Sertoli cells, wherein said co-culturing comprises plating the Sertoli cells and the non-Sertoli cells on a substrate comprising the basement membrane preparation.

60. The method of claim 59, wherein the basement membrane preparation comprises MATRIGEL.

61. A method of making a biochamber comprising co-culturing Sertoli cells and non-Sertoli cells under microgravity conditions for a period of time sufficient for the Sertoli cells to form an outer wall that encapsulates a plurality of the non-Sertoli cells, wherein said co-culturing is carried out in culture medium containing a basement membrane preparation.

62. The method of claim 61, wherein the basement membrane preparation comprises MATRIGEL.